Sociology 2275, Social Network Analysis, Fall, 2022

Assignment 2: Creating xUCINET Data Sets; Network Data

1. This exercise gives you some experience in creating an xUCINET data set and performing a couple of basic operations on it.

a. Preparation. Read the handout on "Creating and Augmenting an xUCINET data set" in the Implementation/ Software Notes folder of the Modules tab of the course's Canvas site. Also, download two .csv format files, Hansell_network.csv and Hansell_attrib.csv from the Data folder of the Modules tab. Make note of the path to these data sets on your computer, or at least know how to find them there.

These data are from a study of cooperative learning by Stephen Hansell, from the following article:

> Hansell, Stephen (1984) "Cooperative Groups, Weak Ties, and the Integration of Peer Friendships." *Social Psychology Quarterly* 47 (4): 316-328.

The article is accessible within the Readings folder of the Modules tab if you want to know more about the study (not required).

The data refer to one classroom of 27 sixth-grade students. Students were asked to use a roster and indicate their level of liking for other students using smiley-face icons. These binary data code big-smile responses ("a lot") and moderate-smile responses ("moderate") as 1s, and no-smile ("not much") responses as 0s. The network is directed.

b. Create a data project. Using the Hansell_network.csv file, create a data project for the classroom network.

> 1) Obtain the indegrees for the children in the network. Which child is most popular?
>
> 2) Obtain a summary of the indegree distribution (`table(<indegree>[,1])`) How would you describe its shape?
>
> 2) Do liking choices tend to be reciprocated? (assess using the `xReciprocity()` function)

Turn in: The output you obtain for 1), 2) and 3), together with your verbal interpretation of what the results mean.

c. Add an attribute. The file Hansell_attrib.csv contains data on one attribute, a child's gender. Boys were assigned code 1 and girls code 2. Using this file, add the gender attribute to with data project you created in part b.

Then obtain a "subgroup density table" by calculating densities separately for subgroups of boys and girls. You can accomplish this using the `xDensity()` function; you will need to add options to it for `ROWS=<attribute>` and `COLS=<attribute>`, filling in `<data project name>$Attributes$Gender` for "attribute".

Turn in: a listing of the attributes in your data project (i.e. <data project name>$Attributes), your subgroup density table, and an interpretation of the four entries in your subgroup density table.

2. Read pp. 846-852 of the article by Hargens on "Using the Literature . . . " (the rest of it is interesting, too, but these pages include what you need to know for this assignment). Then answer the following questions about that article.

a. Reference-network data refer to "research areas." Does Hargens use a nominalist or realist conception of the boundaries of these networks? Explain your answer.

b.   1) What are the nodes and relationships in a reference network?

           2) Are reference networks directed or undirected?

           3) Does a reference network include attributes . . . and if so, what are they?

c. Describe the boundary specification procedures that Hargens used in determining empirically what nodes to include in a reference network, and the source(s) from which the data were obtained.

Due: Tuesday, September 20.

Note: These assignments will not be graded, but we will take note of whether or not you do them. Please submit to either derick_baum@g.harvard.edu or pvm@wjh.harvard.edu .